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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,487	11/10/2000	John Josef Hench	VOY-030	5334

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EXAMINER	
LY, ANH VU H	

ART UNIT	PAPER NUMBER
2472	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/710,487	HENCH ET AL.	
	Examiner	Art Unit	
	ANH-VU H. LY	2472	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-20,22,24-31,33 and 35-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-20,22,24-31,33 and 35-44* is/are rejected.

7)☒ Claim(s) *44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is in response to Applicant's amendment filed March 12, 2010. Claims 1-2, 4, 6-20, 22, 24-31, 33, and 35-44 are pending.

Claim Objections

2. Claim 44 is objected to because of the following informalities: in line 7, delete "optimizing the at least one parameter of at least one channel". Claim 7 is already terminated after "combinations thereof". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4, 6-20, 22, 24-31, 33, and 35-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Green et al (US Patent No. 6,625,255 B1). Hereinafter, referred to as Green.

With respect to claims 1, 13, 20, and 30, Green discloses a method for the prediction and optimization of a communication system (Figs, 1, 4, and 5) comprising:

inputting data from a plurality of channels into a prediction module of the communications system (Fig. 5, block 512);

predicting a performance of at least one of the plurality of channels using a plurality of parameters to characterize the performance of the at least one of the plurality of channels (Fig. 5, block 506);

creating at least one transform function model of the at least one of the plurality of channels, wherein the at least one transfer function model is simulated using physical configuration information of the communications system (col. 7, lines 56-60, the characterization may also include the development of a transfer function that reflects the results of the field testing of the reference loop and this transfer function may be employed in reference loop simulation); and

optimizing the parameters of at least one of the plurality of channels in order to improve a bit rate of the at least one of the plurality of channels in the communication system (col. 7, line 64 – col. 8, line 9).

With respect to claims 2, 20, and 31, Green discloses that wherein predicting the performance of the at least one of the plurality of channels comprises:

inputting data from at least one channel of the communications system into a prediction module (Fig. 4, block 400);

determining an impairment on the at least one channel (Fig. 4, block 410);

characterization the at last one channel using the at least one transfer function model and the impairment (col. 4, lines 21-25, this characterization may include the development of a transfer function which models the effects, such as attenuation, flat noise, and coupled noise of the reference loop on signals, such as tones, transmitted through it).

With respect to claims 4, 22, and 33, Green discloses that wherein the at least one transfer function model is simulated using a spectrum management system (col. 7, lines 3-5, the attenuation profile is applied to a loop simulation across a signal frequency range, such as an ADSL signal frequency range. Herein, loop simulation across a signal frequency range is a bandwidth simulation system).

With respect to claims 6, 24, and 35, Green discloses that wherein the impairment is selected from te group consisting of cross-talk impairment, AM radio interference, a temperature impairment, and any combination thereof (col. 7, lines 53-55).

With respect to claims 7 and 36, Green discloses that wherein optimizing the parameters comprises:

a) choosing a first parameter for the at least one of the plurality of channels (Fig. 4, block 406);

b) choosing a second parameter for the at least one of the plurality of channels (Fig. 4, block 408);

c) determining an optimization criteria for the channel based upon the first parameter and second parameter (Fig. 4, block 410);

d) repeating a) - c) until the optimization criteria is optimized for the communication system (Fig. 4).

With respect to claims 8, 15, 25, and 37, Green discloses that wherein the communications system is a wireline communications system (Fig. 3).

With respect to claims 9, 16, 26, and 38, Green discloses that wherein the communications system is a wireless communications system (col. 1, line 57).

With respect to claims 10, 17, 27, and 39, Green discloses that wherein the communications system is an optical communications system (col. 1, line 58).

With respect to claims 11, 18, 28, and 40, Green discloses that wherein the communications system is a cable communications system (Fig. 3).

With respect to claims 12, 19, 29, and 41, Green discloses that wherein the communications system is a DSL communications system (Fig. 3).

With respect to claim 14, Green discloses that wherein the design criteria are selected from the group consisting of a cost of deployment, a signal to noise ratio, total revenue, bit rate, and any combination thereof (Fig. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green.

With respect to claims 42-44, Green discloses a method and a system for the prediction and optimization of a communication system (Figs, 1, 4, and 5). Green does not disclose that constraint or design criteria is selected from the group consisting of: transfer functions and uncertainties, pricing as a function of a service level, service type, spectral management rules, residential customers, home office customers, small business customers, general business customers, and combinations thereof. However, those design criterions are well known in the art in planning, developing, building, and marketing network systems. Therefore, it would have been obvious to one having ordinary skilled in the art at the time the invention was made to include those design criterions in Green's system, to achieve the most beneficial results.

Response to Arguments

5. Applicant's arguments filed March 12, 2010 have been fully considered but they are not persuasive.

Applicant argues in page 10 that Green fails to disclose "optimizing the parameters of at least one of the plurality of channels in order to improve a bit rate of the at least one of the plurality of channels in the communication system". Specifically, Green does nothing more than disclose a process in which modems are qualified for transmission up to a data rate when a threshold value of bit error rate for that data rate is reached (col. 7, line 64 to col. 8, line 9).

Examiner respectfully disagrees. Continuously adjusting the data rates is an optimum process. It is an optimization for selecting an optimum data rate. Data rate is the number of bits or information to be transmitted over a period of time on a loop or channel, e.g., seconds. It is a parameter of a channel. Therefore, continuously adjusting the date rates is optimizing the parameters of the channel.

Applicant argues in page 11 that Green teaches away from optimizing parameters of a channel and fails to disclose finding an optimum characterization for at least one channel based on at least one design criteria.

Examiner respectfully disagrees. A qualified data rate that satisfies the required threshold value of bit error rate, as taught by Green, see rejections stated above, is the optimum parameter of the channel. Further, the threshold value of bit error rate is the design criteria.

Applicant argues in page 12 that Green fails to disclose characterizing at least one channel using **both** the transfer function and an impairment. Examine respectfully disagrees. Claim 20 does not recite "both" as argued by the Applicant. Assuming that claim 20 recites both transfer function model and impairment, Green discloses (col. 4, lines 21-25) that this characterization may include the development of a transfer function which models the effects, such as attenuation, flat noise, and coupled noise of the reference loop on signals, such as tones, transmitted through it. Herein, noise is used to determine the characterization of a channel. Therefore, transfer function and noise are both used in characterizing the parameters of the channel.

Applicant argues in page 12 that Green fails to disclose a spectrum management system that simulates a transfer function. Examiner respectfully disagrees. Green discloses (col. 7, lines

56-60) that the transfer function may be employed in reference loop simulation. Further, Green discloses (col. 7, lines 3-5) the attenuation profile is applied to a loop simulation across a signal frequency range, such as an ADSL signal frequency range. Herein, transfer function is used during loop simulation.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH-VU H. LY whose telephone number is (571)272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anh-Vu H Ly/
Primary Examiner, Art Unit 2472